

REMARKS

Applicant's counsel thanks the Examiner for the careful consideration given the application. Claims 1-11, 13-17, 19, 21-25, and 27-38 have been amended. Claims 12, 18, 20 and 26 have been cancelled.

Claim Rejections - 35 U.S.C. §112

Claim 9 has been rejected under Section 112, second paragraph, as being indefinite, in particular the term "the universal..." lacks antecedent basis in the claims. Claim 9 has been amended to depend from claim 6 and not claim 5 and is now in compliance with U.S.C. 112.

Claims 12 and 26 have been rejected under Section 112. Claims 12 and 26 have been cancelled without prejudice.

Claim Rejections - 35 U.S.C. §102

O'Haire

Claims 1-5, 17, 19 and 33-35 have been rejected under Section 102(b) as being anticipated by O'Haire.

O'Haire discloses the claimed evacuation module, including a floodable bay in an "offshore unit" (submarine) accommodating a submarine for transporting crew. The submarine 16 may be launched from the bay. The walls of the bay form a shaft which extends to a predetermined exterior portion of the offshore unit. The module includes means for flooding the bay. Once the bay is flooded, pressure variances will open the exterior door due to a buoyancy characteristic of the door.

Applicant points out that there are no substantive similarities between the two evacuation systems. O'Haire consists of a powerless escape module with uncontrolled ascent which is inherently dangerous, without air supply that is intended to proceed to the surface solely on buoyancy. Once on the surface it would be at the mercy of whatever sea/ice/temperature elements that may be encountered. At the same time, extremely quick surface recovery of the escape module would be required due to the lack of power and life support systems (air). Again, depending on the surface conditions, such a quick recovery might not be possible.

In direct contrast, the present submarine evacuation system comprises of a fully equipped and self-contained submarine, using the latest underwater technology. If required, this escape unit can remain completely submerged for days until surface conditions were such that a safe recovery could be carried out. Alternatively, the submarine may proceed to a port. Independent claims 1, 19 and 33 have been amended to indicate that the submarine is powered, thereby distinguishing from O'Haire.

All of these features are lacking in the O'Haire system. Also, the O'Haire system is designed for use only if the downed submarine is in a perfectly upright position. A list in any direction would prevent the escape module from departing the flooded compartment even if the buoyant door did succeed in opening.

On the present system, the door is precharged to open (present application pp. 8-15) and the system can operate regardless of the list of the vessel. As well, the O'Haire system is designed solely for the escape from a sunken submarine whereas the present system can be adapted for evacuation from all ocean-going vessels or fixed or floating structures.

Regarding claim 18, the Examiner has stated that, "since the goal of the launch is to save the crew and get them to safety, inherently such a craft will move to the surface". Claim 18 has been cancelled without prejudice.

Gerolami

Claims 1-5, 14, 19 and 31 have been rejected under Section 102(b) as being anticipated by Gerolami et al.

Gerolami et al. discloses a vessel as that of O'Haire as discussed above, and also provides doors 10 positioned on opposite ends of the submarine bay.

Applicant points out that the doors (10) positioned on opposite ends of the submarine bay are only for personnel entry to the evacuation module as stated in Gerolami pp. 2-4 and the salvage buoy only exits the chamber through cover 6 (pp. 2-4). Gerolami works if the chamber 3 (Figure 1) is pointed to the surface. If hinge cover 6 is pointed down or at a list, buoyancy will prevent the salvage buoy from leaving the chamber. In the present design the vessel can exit the chamber regardless of its orientation.

Like O'Haire, the Gerolami evacuation system is based solely on buoyancy of the salvage buoy to rescue crew members on a one-by-one basis from a sunken submarine. The escape module is without power or life support and requires immediate recovery at the surface regardless of weather or sea/ice conditions. Also operation is dependent on a crew member situated in the sunken submarine outside the escape apparatus.

There is no similarity between the Gerolami procedure and the present evacuation system which comprises of a fully operational, self-contained submarine holding multiple evacuees capable of remaining submerged for an extended period, independent of outside support. As well, the present system is designed for use on a variety of ocean going vessels or fixed structures. Further, the exterior exit door of Gerolami's system (#6 of Figure 1) is opened by using a hand activated lever located outside the escape buoy whereas the Subevak's exterior exit door is precharged to open and is operated from within the submarine. Independent claims 1, 19, and 33 have been amended to indicate that the submarine is powered, thereby distinguishing from Gerolami.

Hoke, Jr.

Claims 1-5, 10, 11, 19, 20 and 28 have been rejected under Section 102(b) as being anticipated by Hoke, Jr.

Hoke, Jr. discloses the claimed evacuation module, including a floodable bay in an "offshore unit" (submarine) accommodating a submarine for transporting crew. The submarine may be launched from the bay. The walls of the bay form a shaft which extends to a predetermined exterior portion of the offshore unit. The module includes means for flooding the bay, means for opening the hatch, and a hook/reel assembly 41 with means for control.

Applicant responds that Hoke, Jr.'s design is similar to Gerolami as a flotation device to the surface from a sunken submarine. Hoke Jr. has a hook/reel assembly to reel in the capsule to rescue another crew member. Operation is dependent upon a crew member in the sunken submarine outside the escape apparatus. In contrast, in the submarine of the present system, control is within the submarine and is not dependent on an outside crew operator. This allows for full evacuation of the platform and does not require that a crew member be left behind. Additionally, the submarine of the present system can accommodate multiple crew members and therefore is more efficient and safer in evacuating crew from a platform.

Hoke, Jr.'s evacuation module is designed to go directly to the surface whereas the present system is designed so that it may remain submerged if required, for example, during harsh conditions topside. Independent claims 1, 19, and 33 have been amended to indicate that the submarine is powered, thereby distinguishing from Hoke Jr.

Woodland

Claim 13 has been rejected under Section 103(a) as being unpatentable over O'Haire in view of Woodland.

O'Haire et al. fails to mention the use of sonar on his submarine. Woodland teaches the use of sonar on a life craft. The Examiner argues that "It would have been obvious to one of ordinary skill in the art at the time of the invention to employ a sonar on the submarine life craft of O'Haire as taught by Woodland. Such a combination would have been desirable so as to provide the ability to avoid collision. Re: "near the bay door", such is considered an inherency of such a sonar system".

Applicant responds that the present sonar has been included in the system to allow for increased safety when exiting the rig/vessel. Woodland is a marine personnel surface rescue craft that does not have subsurface capability similar to any number of currently existing surface rescue craft. The Woodland reference does not overcome any of the shortcomings of O'Haire, as outlined above and therefore even in combination with O'Haire does not guide the skilled artisan to the solution of the present system. The present system is an underwater evacuation submarine system.

Barhite et al.

Claims 21-25 have been rejected under Section 103(a) as being unpatentable over Hoke, Jr. in view of Barhite et al.

Hoke, Jr. fails to disclose rollers. Barhite et al. teaches guiding rollers. The Examiner argues that "It would have been obvious to one of ordinary skill in the art at the time of the invention to provide cradling/guiding rollers to Hoke, Jr. as taught by Barhite et al. Such a combination would have been desirable so as to provide for reduced friction".

Claim 27 is rejected under Section 103(a) as being unpatentable over Hoke, Jr. in view of Barhite et al. as applied to claim 25 above, and further in view of Woodland. The Examiner states that "Woodland is applied as above".

Claims 36-38 have been rejected under Section 103(b) as being unpatentable over O'Haire.

The Examiner takes official notice, "that the claimed evacuation procedure is old and well known, and further falls within the realm of common sense. To have personnel gather at a muster station and be counted/logged is standard cruise ship evacuation procedure. The number of times they are to be counted is obvious to anyone working in the art. To physically check the operating status of the lifeboat is again standard procedure, and such would have been obvious to anyone evacuating a ship with the system of O'Haire".

Applicant argues that Barhite has two sets of three guiding rollers (#36, Figure 6) that do not support the weight of the man-carrying capsule and are employed in a vertical manner only to assist in the deployment and retrieval of the capsule. The present rollers are used to support the full weight of the evacuation submarine and assist in its deployment and re-entry to the submarine bay.

Barhite is a submersible that was designed basically to assist in undersea work. It has the capacity to deposit and retrieve workers using a detachable man-carrying capsule that can be lowered from the submersible. Unlike the present system, it is not intended to perform as an evacuation system to remove crews from other vessels or fixed ocean structures as only one crewman can be deposited or retrieved at a time. Barhite does not overcome the shortcomings of Hoke Jr. and therefore even in combination does not render the present system obvious to a skilled artisan.

As outlined above, O'Haire does not disclose a powered submarine for evacuation and therefore in view of the amendments to claim 33, upon which claims 36-38 depend, O'Haire does not render obvious the evacuation method.

Sanders

Claims 15 and 16 have been rejected under Section 103(a) as being unpatentable over Hoke, Jr. in view of Sanders.

Hoke, Jr. fails to show use of his device in a pontoon. Sanders teaches the use of a submarine hull as a pontoon. The Examiner argues that "It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of the submarine hull of Hoke, Jr. as a pontoon as taught by Sanders. Such a combination would have been desirable so as to provide for further utility of the hull".

Applicant argues that Sanders use of non operational submarine hulls as an integral part of semi-submersibles has no relationship whatsoever to Subevak's use of fully operational submarines as part of an evacuation system. Sanders submarine hulls are used simply to replace standard pontoons as the base for semi-submersibles. They are not detachable, and are an integral part of the ballast control system (pgs. 1-33-40) and in no way could be used as a self-contained fully operational, inboard submarine such as intended by the present evacuation system. Sanders use of non-operational submarine hulls is simply an alternative rig construction technique and while this procedure in itself may have merit, it in no way represents a means of evacuation. Especially in view of the amendment of the independent claims to indicate that the submarine is powered, Sanders is rendered irrelevant.

Accordingly, for the reasons set forth above, the claims which have been discussed clearly define over the cited art and are now in condition for allowance. Since all of the dependent claims now depend directly or indirectly from an allowable base claim, they are also allowable for the reasons given above.

Regarding the applicant's IDS, copies of the references were not enclosed because they were previously sent by the IB to the USPTO; they must have gotten lost in transition or been misplaced; in any event, applicant is enclosing herewith a copy of the one cited foreign patent reference so that it may be considered by the Examiner. Applicant is also enclosing herewith a copy of the Form PTO-1449 previously submitted and requests that an initialed copy of this form be enclosed with the next communication.

In view of the above amendments and remarks, and having dealt with all the objections raised by the Examiner, reconsideration and allowance of the application is courteously requested.

If any additional fees are required by this communication, please charge such fees to our Deposit Account No. 16-0820, Order No. GOWL-39540.

Respectfully Submitted,
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